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ABSTRACT

The Office of Student Support Services (SSS) at Prince George's Community College (PGCC) is an academic support program for at-risk students. Created for low-income and first-generation students and those with physical and learning disabilities, the program provides specialized study tools, tutorial assistance, and social and emotional support. PGCC assessed the effectiveness of its program using a control group comparison research approach. Students were divided into three groups: active SSS participants, students not participating but eligible to, and the remaining student body. Comparisons of the three groups based on academic performance indicators showed that in 1996, SSS participants strongly outpaced the eligible nonparticipant control group, and either matched or bettered the performance record of the remaining PGCC students. Cross-tabulations indicated that SSS participant success was not merely due to population differences in the three groups, but was indeed a result of program participation. Comparison of SSS with a similar academic support program for minority students, ALANA, showed comparable success rates for participants in both groups. Appendix includes table of comparison groups. (YKH)

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THE ACADEMIC IMPACT OF STUDENT SUPPORT SERVICES PROGRAM PARTICIPATION IN FISCAL YEAR 1996

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Introduction

As is the case with many open-enrollment higher educational institutions, Prince George's Community College must deal with student bodies the majority of whose members are academically at risk in one way or another. A common college strategy for raising the probability of study success has been the establishment of academic support programs for special populations of at-risk students. One of the most prominent of these at PGCC is the Office of Student Support Services (SSS), funded as a Department of Education TRIO program and in place since 1990, which offers a program targeting low-income and first generation students and those with physical and learning disabilities. Program participants admitted from these populations are given assistance to equip them "with specialized study tools and techniques, alternative classroom aids and tutorial assistance." The program is designed to address "not only academic concerns, but also the social, cultural, physical and emotional aspects of the student's well-being" by helping students to "build confidence in their own abilities and worth, improve their academic and personal growth, and plan their educational and career development with realism and decisiveness" (College Bulletin).

From its inception, SSS's grant has limited participation to 275 active participants in any given fiscal year, although research carried out by OIRA in support of SSS's most recent grant application suggests that the program's participation potential is far higher within the college's credit student body. A survey of Fall 1992 first-time entering students, which ascertained student household income levels and parental educational histories (data elements not available from the Student Records Office), found that low income, first generation respondents struggling academically (two or more developmental placements) made up exactly a fourth of the total sample members. This combination of attributes has regularly defined around three-quarters of all SSS participants in recent years. And, if one cautiously speculates in the absence of hard data that another 10 percent of the typical entering freshman class might also consist of students with disabilities or language difficulties (the two other criteria of SSS application), then we may estimate that about a third of all entering students might qualify as SSS participants.

The question always arises, however, whether this sort of population-targeted educational intervention actually enhances participant academic performance. In this program evaluation we will report research which suggests a prodigious level of SSS success in carrying out its mission.

Study Methodology

Our research strategy was to employ a straight-forward control group comparison approach. Academic performance indicator data (cumulative grade point average, graduation rate, percent transferring to four-year schools, etc.) were collected from the Student Record Office and other sources for all students enrolled in any credit courses during fiscal year 1996 (Summer II 1995, Fall 1995, Spring 1996, Summer I 1996). This fiscal year "cohort" was then divided into three performance comparison groups: (1) Active SSS participants; (2) Students not participating but probably eligible (i.e., those with socio-economic, familial and academic profiles strongly resembling those of SSS students), and (3) the remaining student body. Our research assumption was that if SSS participation was performance enhancing, then we would find SSS student performance significantly outpacing that of non-participant eligibles, and if SSS were highly effective, participant performance might even match or exceed that of students generally.

The main methodological difficulty we encountered in putting this research plan into operation turned out to be the segmentation of the student body into the three comparison groups, in particular, the question of how non-participant eligibles might be identified and separated from the rest. In essence, the problem was that data on physical disabilities, household income, and parental educational levels, key criteria for determining program eligibility, are not systematically collected by the Student Records Office, and such fragmentary data which does exists along these lines is mainly the result of in-take interviews of students volunteering for participation in support programs like SSS. Hence, any sample created around such partial data would yield a group strongly biased in membership toward students participating in other college support programs. To get around the problem of the absence of systematic, individual-level SSS criteria data, we decided to employ *a probabilistic indirect measurement approach*, utilizing 1990 U.S. Census data to identify non-program students from across the entire credit student body in a term who would be *highly likely* to share the background attributes of program members. The college Office of Institutional Research and Analysis (OIRA) has developed a county neighborhood targeting system based on 1990 Census data by Census tract (*PG-TRAK*^{90}) which can tag student home Census tracts by means of address analysis. Using *PG-TRAK*^{90}, OIRA found all FY96 credit students who shared the following: (1) home tracts with median annual household incomes of under $40,000

(those highly likely to be low income students); (2) home tracts fewer than 20 percent of whose adult residents graduated from college with a bachelor's degree or better (highly likely to be first generation students). Then, using student record data, OIRA reduced this group to those who also placed into 2 or more basic college skills remedial programs (highly likely to experience academic difficulties). Finally, OIRA dropped from the sample all members known to be current participants in SSS and ALANA (the largest other student support service at the college). The end-product was a collection of non-program students with a high probability of matching the academically at-risk, first generation, low income profile predominating among SSS participants.

Findings

Table 1 presents the basic findings of our study. The table's central columns represent the fiscal year 1995-1996 credit student body as a whole and as segmented into the three test comparison groups (FY96 SSS program participants, estimated SSS-eligible nonparticipants, and the student body residual), while the rows give data on student group academic performance by a variety of group performance indicators: percent with a cumulative grade point average of 2.0 or better, percent earning good academic standing in at least two out of three major terms attended, percent having accumulated the full-time equivalent of a year's worth of credit hours (30) or more, and percentages achieving a formal academic goal (Associate degree, transfer to a four-year institution, or either) during the four term period considered. The last two data rows provide raw scores for group average cumulative GPA and cumulative credit hours. The table's last two columns display summary statistics portraying the performance difference between SSS students and the estimated eligibles or remaining non-eligibles as simple score ratios.[1]

The message of Table 1 is very clear: In every group performance indicator case, we find FY96 SSS participants strongly outpacing the eligible nonparticipant control group, and either equaling or somewhat bettering the performance record of the noneligible remainder of students attending FY96. The effect was particularly striking in the formal achievement rate comparisons – for example, more than *five times* (5.33) as many SSS students could count graduating or transferring or both as FY96 accomplishments compared with the eligible nonparticipants, and over *twice* as many (2.29) ended up with formal achievements than did non-eligibles . But the performance superiority of SSS students, though less marked, was also quite

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[1]For example, the SSS-to-Eligible ratio for percent with 2.0+ GPA was 1.59 (80.1/50.5), indicating that the collective proportion of SSS students with passing averages was 59 percent greater than the comparable proportion of students in the eligible nonparticipant control group.

significant in the general progress categories – Good Standing ratios 1.35 with the control group and 1.25 with remaining students, Passing GPA ratios 1.59 and 1.07 respectively, and 30+ Credit Hour ratios 2.76 and 2.00 respectively.

TABLE 1. BASIC SSS PROGRAM FY 1995-1996 ACADEMIC RESULTS COMPARED WITH THOSE FOR CONTROL GROUPS

PROGRESS CRITERIA	ALL FY96[1]	COMPARISON GROUPS			RATIOS	
		SSS	ELIG. NON-SSS[2]	ALL OTHER	SSS/ ELIG.	SSS/ OTHER
% Passing Cum. G.P.A. (2.0+)	73.9	80.1	50.5	75.1	1.59	1.07
% Mostly Good Standing*	63.3	79.1	58.5	63.3	1.35	1.25
% 30 Native Credit Hours Earned	26.6	53.3	19.3	26.6	2.76	2.00
% Earning Award FY96**	6.1	11.9	2.4	6.2	4.96	1.92
% Transferring to 4-Yr FY96***	2.2	7.3	1.1	2.1	6.64	3.48
% Either Award or Transfer	7.7	17.6	3.3	7.7	5.33	2.29
Cumulative G.P.A.	2.41	2.42	1.64	2.45	1.48	.99
Cumulative Native Credit Hours	20.8	36.3	15.5	20.8	2.34	1.75
HEAD COUNT	17,751	261	871	16,619	--	--

1. Included were students enrolled in courses during any FY96 school term (Summer II 1995, Fall 1995, Spring 1996, Summer I 1996)

2. A special control group of non-SSS-participating students with background characteristics similar to those of most SSS-participating students. Students included were all not currently receiving SSS assistance nor any from the other major support program at PGCC (ALANA, the African American/Latin American/Native American Support Program), for whom all of the following was true: (1) lived in a 1990 Census Tract with a median annual household income of under $40,000; (2) lived in a 1990 Census tract fewer than 20 % of whose adult population had earned a bachelor's degree of better; (3) were placed into 2 or more basic college skills remediation programs.

* Designated as being in good academic standing in at least two out of three major terms (Fall/Spring) attended; students enrolled in summer terms only (7 percent) were dropped for the purposes of this calculation.

** Graduated during FY96 with either an Associate of Arts, Science or Applied Science degree.

*** Transferred to a 4-year college or university during *or after* FY96, according to the Maryland Higher Education Commission Transfer Student System (TSS) or SSS participant interviews. TSS provided the data for all but 11 cases. TSS transfer tracking is limited to students enrolling in Maryland 4-year public colleges and universities; students who may have gone onto Maryland private or out-of-state institutions are invisible to the system.

To test whether the SSS participation performance enhancement effect suggested in Table 1 might just be the result of population differences in the three comparison groups, we also ran a series of cross-tabulations paralleling group performance levels measured by the above indicators while controlling for four kinds

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of population bias: race, gender, immediate entry from high school (traditional college student) versus delayed entry (adult learner), and average major term credit hour load (fewer than 10 or 10 or more credit hours). Table 2, below, shows the results we obtained using the percent with 30+ credit hours indicator. The table's column set-up (comparison group breaks) is identical to that of Table 1, but its rows represent student body breaks by background rather than performance indicator categories. Each cell gives the percentage of students with 30+ credit hours who were defined by both the column and row categories – e.g., 69.4 percent of students who were *both* SSS participants *and* white had reach the 30+ credit hour level, while only 37.9 percent of those *both* Eligible Nonparticipants *and* white did so.

TABLE 2. COMPARISON GROUP PERCENTAGES OF STUDENTS WITH 30+ CREDIT HOURS BY SELECTED BACKGROUND VARIABLES*

BACKGROUND CONTROL GROUP	ALL FY96	COMPARISON GROUPS			RATIOS	
		SSS	ELIG. NON-SSS	ALL OTHER	SSS/ ELIG.	SSS/ OTHER
Whites	32.6	69.4	37.9	32.3	1.83	2.14
Minority	24.5	50.7	18.6	24.4	2.73	2.08
Females	27.6	58.5	19.8	27.5	2.95	2.13
Males	25.0	39.7	18.0	25.1	2.20	1.58
Immediate Entry from H.S.	35.1	46.2	18.4	36.2	2.51	1.28
Delayed Entry	21.8	58.1	20.3	21.3	2.86	2.73
Avr. Major Term Load 0-9 Hrs	22.5	54.1	19.2	22.3	2.82	2.43
10 or More Hours	38.1	52.4	19.4	39.2	2.70	1.34
HEAD COUNT	17,751	261	871	16,619	--	--

* See Appendix Table A for percentage subsample base counts

The All FY96 Student column of the table clearly shows that three of the four background variables tested did somewhat impact on credit accumulation at PGCC: white students (33 percent) tended to reach or exceed the 30 credit hour level more often than minority students (25 percent), immediate entry students (35 percent) more often than delayed entry students (22 percent) and those averaging 10 or attempted hours a term (38 percent) more often than low load students (23 percent). And these tendencies were also observable within comparison groups. For example,

the white component of each comparison group always showed a higher percentage of students with 30+ credit hour accumulations than the minority component within the same comparison group. However, looking at credit hour accumulation across comparison groups for students sharing the same background attribute shows that the performance superiority of SSS participants holds as true as ever. This can be quickly seen from summary ratios of SSS participant-to-comparison group performance: these remained high whether students were of white or nonwhite, female or male, immediate entry or delayed entry, or high or low credit load categories. Furthermore, this was typical of all our cross-tabular tests for population bias as an explanator. Test control for background attribute involving group GPA, Academic Standing and formal achievements, though varying in detail, had almost the same results. Thus, it would appear that the SSS participation performance-enhancement effect was not to be explained away as an artifact of population bias but was a true, independent phenomenon.

TABLE 3. SSS AND ALANA PARTICIPANTS COMPARED ON SELECTED PERFORMANCE INDICATORS

PERFORMANCE INDICATORS	ALL FY96	COMPARISON GROUPS				
		SSS ONLY	ALANA ONLY	BOTH PROGS.	SSS ELIGS.	ALL OTHER
%Passing Cum. G.P.A. (2.0+)	73.9	79.0	76.6	86.5	50.5	75.1
% 30 Native Credit Hours Earned	26.6	50.9	66.4	67.6	19.3	25.9
% Either Award or Transfer	7.7	18.3	18.5	13.5	3.3	7.6
HEAD COUNT	17,751	224	286	37	871	16333

Finally, we decided to extend our study of the impact on performance of population-targeted academic support programs to include a comparison of our SSS student outcomes with those found for participants in the ALANA program designed especially for academically struggling minority students and offering somewhat similar academic support services. A recent OIRA study[2] of this latter program, based on a comprehensive analysis of ALANA students within first-time entering student cohorts since Fall 1991, turned up a major academic performance-enhancement

[2] *The ALANA Minority Student Retention and Transfer Program: First-Time College Students in ALANA Fall 1991 through Spring 1995* (Program Evaluation PE97-1, October 1996). ALANA stands for African American, Latin, Asian, Native American.

effect, and we wondered what would happen if we compared FY96 SSS and ALANA students using the methodology of the present study. We identified the 323 ALANA participants attending PGCC during FY96, broke out the 37 student overlap with the 261 SSS participants of FY96, and re-ran the Table 1 performance indicator tests using new comparison groups. The results are embodied in Table 3 just above.

According to Table 3, both FY96 students served by SSS and those served by ALANA experienced a higher likelihood of academic success than did probable low-income, first-generation developmental students (the SSS Eligible Nonparticipants) or the remainder of the student body. Furthermore, the collective performance boost discovered was approximately of the same magnitude: 79 percent of SSS students had passing GPAs compared with 77 percent of the ALANA students, which about matched the 75 percent residual student rate and far exceeded that for the at-risk control group; 51 percent of SSS students had reached or surpassed 30 credit hours earned during FY96 compared to 66 percent of the ALANA students, both far outdoing the control and residual groups by two- or three-to-one; and SSS and ALANA participant rates of formal achievement (graduation or transfer) equaled one another (18 percent), dwarfing both control group (3 percent) and residual student (8 percent) records.

Conclusion

Three main findings emerge from our research:

(1) Students participating in the Student Support Services Program have a far higher likelihood of academic success than do at-risk students generally and even tend to outperform the typical "non-at-risk" student;

(2) This performance-enhancement effect survives a reasonable test of population bias and cannot be considered a mere product of the special background attributes of participants;

(3) the performance boost obtained by participating in SSS is similar to that resulting from taking part in at least one other major population-targeted, academic intervention program – ALANA.

While these results cannot be considered definitive because of limitations in our methodology,[3] we feel that the degree of the performance enhancement

[3]In particular, we included no testing for any motivational bias that might have resulted from the voluntary nature of SSS participation.

discovered makes a very strong *prima facie* case for the efficacy of the SSS program. Furthermore, with the parallel ALANA data we developed and the findings of previous research on support program effectiveness, we believe that the evidence is mounting that targeted support program academic intervention is proving a very viable strategy for dealing with at-risk students at the college.

Unfortunately, the proportion of students now being reached by such programs during any school year is minuscule compared with the need. In FY96, 41 percent of the nearly 18,000 credit students enrolled needed basic skills remediation at some point in their PGCC tenure and 90 percent of these are still struggling to complete their developmental requirement; on the other hand, FY96 SSS and ALANA participants combined add up to only around 550 students, and even throwing in all other student support programs and agencies on campus, the total proportion cannot be much larger. Limited federal funding, and other budgetary and operational constraints are currently restricting our ability to meet a vast need with actions which research increasingly shows would make a great difference to our students and the attainment of their academic goals.

Karl Boughan
Supervisor of Institutional Research

APPENDIX

TABLE A. COMPARISON GROUPS BY BACKGROUND VARIABLES SUBSAMPLE SIZES

BACKGROUND CONTROL GROUP	ALL FY96	FY96 COMPARISON GROUPS		
		SSS	ELIG. NON-SSS	ALL OTHER
Whites	4,712	36	29	4,647
Minority	13,039	225	842	11,972
Females	11,271	188	626	10,457
Males	6,480	73	245	6,162
Immediate Entry from H.S.	6,477	106	468	5,903
Delayed Entry	11,274	155	403	10,716
Avr. Major Term Load 0-9 Hrs	13,050	135	510	12,405
10 or More Hours	4,701	126	361	4,214
HEAD COUNT	17,751	261	871	16,619